REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1, 6-8, 13-15, 18-20, 23, and 24 are pending. Claims 1, 8, 15, and 20 are amended. Claims 1, 8, 15, and 20 are independent. The Examiner is respectfully requested to reconsider the rejections in the Office Action in view of the amendments and remarks set forth herein.

Rejection Under 35 U.S.C. §112, first paragraph

Claims 1, 6-8, 13-15, 18-20, 23, and 24 stand rejected under 35 U.S.C. §112, first paragraph, for lack of enablement. This rejection is respectfully traversed.

The Office Action asserts that there is no support in the specification for the recitation in claim 1, lines 3-5, which reads:

> said honeycomb structure having a plurality of air vents, the air vents being substantially equal in size to each other and disposed in concentric rings around an axis of said honeycomb structure.

The Examiner is respectfully referred to FIGS. 1 and 2, which clearly show that air vents 4 are substantially equal in size to each other and are disposed in concentric rings around an axis of honeycomb structure 5. These features have been shown continuously in the drawings since the original filing of the present application. As such, the amendment herein to the specification to more clearly describe this embodiment does not constitute new matter.

In view of the foregoing, it is respectfully submitted that the rejection under 35 U.S.C. §112, first paragraph, has been overcome; and withdrawal thereof is, therefore, requested.

Rejection under 35 U.S.C. §112, second paragraph

Claims 1, 6-8, 13-15, 18-20, 23, and 24 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. This rejection is respectfully traversed.

The Office Action asserts that it is unclear where the specification discloses the recitation in claim 1, lines 3-5 and 11-13, which reads:

> since the material of the case is the same as that of the honeycomb structure, a coefficient of linear expansion of the case is substantially the same as a coefficient of linear expansion of the honeycomb structure, thereby suppressing thermal deformation of the case.

The Examiner is respectfully referred to page 3 of the specification, which explicitly discloses the limitations recited the claims. For example, at page 3, lines 24-27, the specification states:

> Besides, since the material of the case 6 is the same as that of the honeycomb structures, a difference in the coefficient of linear expansion between the case and the honeycomb structures is small, thereby greatly suppressing thermal deformation of the case 6 based on the difference.

In view of the foregoing, it is respectfully submitted that the claims particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Accordingly, the rejection under 35 U.S.C. §112, second paragraph, has been overcome; and withdrawal thereof is, therefore, requested.

Objection to Specification

The disclosure is objected to as containing informalities. In accordance with the Examiner's request, the paragraph at page 4, lines 16-23, is amended to be consistent with FIG. 3 as revised in the change proposed March 19, 2002. Accordingly, withdrawal of the objection to the specification is respectfully requested.

Rejection Under 35 U.S.C. §103(a)

Claims 1, 6-8, 13-15, 18-20, 23, and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Whittenberger et al (U.S. 5.651,906) in view of Kohno et al. (U.S. 5,653,825), Honma (U.S. 5,323,608), Arai et al. (U.S. 5,151,254), and Gulati (U.S. 5,376,341). These claims are further rejected as being unpatentable over Honma in view of Kohno et al., Arai et al., and Gulati. These rejections are respectfully traversed.

While not conceding the appropriateness of the rejection, but merely to advance the prosecution of the present application, independent claims 1, 8, 15, and 20 are amended herein to recite a combination of elements directed to a metal carrier for a catalyst, including a honeycomb structure having a plurality of air vents which are substantially equal in size to each other and are disposed in concentric rings around an axis of the honeycomb structure, wherein the plurality of air vents existing at an outermost position of the honeycomb structure is formed by cooperation of an entire inner face of the case and a waved plate of the honeycomb structure.

Full support for the plurality of air vents existing at an outermost position of the honeycomb structure being formed by cooperation of an entire inner face of the case and a waved plate of the honeycomb structure can be found in the specification, for example, on page 3 of the specification, and in FIGS. 1 and 2.

Since the metal carrier for the catalyst is provided with a plurality of air vents existing at an outermost position of the honeycomb structure being formed by cooperation of an entire inner face of the case and a waved plate of the honeycomb structure, the metal carrier for the catalyst can be made low in weight and cost.

The Applicants respectfully submit that none of the references cited by the Examiner teaches or suggests honeycomb structure having a plurality of air vents which are substantially equal in size to each other and are disposed in concentric rings around an axis of the honeycomb structure, wherein the plurality of air vents existing at an outermost position of the honeycomb structure is formed by cooperation of an entire inner face of the case and a waved plate of the honeycomb structure.

For example, Whittenberger merely discloses air vents formed by corrugated or involute core elements and which vary in size.

Kohno et al. merely discloses stainless steel sheets having an Mo content of not more than 2.0%. Kohno et al. provides no teaching or suggestion about the size or arrangement of air vents.

Regarding Honma (U.S. 5,323,608), the Examiner asserts that this patent discloses the conventionality of providing a honeycomb structure having air vents of equal size and disposed

in concentric rings. Applicants respectfully disagree. As can be seen in FIGS. 1, 2, and 5, Honma merely discloses a sheet 20 that is rolled up in a spiral configuration to form the exhaust passage. See, also, column 3, lines 10-15. Moreover, since the spiral sheet 20 seems to be loosely fitted into the casing 12, the Honma device requires retaining members 16 to hold the spiral sheet in place.

By contrast, as set forth in claims 1, 8, 15, and 20 as amended herein, the plurality of air vents existing at an outermost position of the honeycomb structure is formed by cooperation of an entire inner face of the case and a waved plate of the honeycomb structure. Honma teaches no such configuration.

Regarding Arai (U.S. 5,151,254) and Gulati (U.S.5,376341), these references provide no teaching or suggestion of a honeycomb structure having a plurality of air vents that are substantially equal in size to each other and are disposed in concentric rings around an axis of the honeycomb structure, wherein the plurality of air vents existing at an outermost position of the honeycomb structure is formed by cooperation of an entire inner face of the case and a waved plate of the honeycomb structure, as set forth in independent claims 1, 8, 15, and 20 of the present application.

Thus, it is respectfully submitted that the cited references, taken alone or in combination, fail to teach or suggest the novel combination of elements of the present invention. Accordingly, the rejection under 35 U.S.C. §103(a) has been overcome, and independent claims 1, 8, 15, and 20, as amended herein, as well as the claims depending therefrom, are believed to be in condition for allowance.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, she is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 205-8000.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,
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MARKED-UP VERSION OF AMENDMENTS

IN THE SPECIFICATION:

Please **amend the paragraph beginning on page 3, line 8,** as follows:

In Figs. 1 and 2, a cleaner 1 for exhaust gas that is fitted to an exhausting system of a motorcycle is composed of a metal carrier 2 for a catalyst and a catalyst layer 3 carried thereon. The metal carrier 2 has a honeycomb structure 5 which is in a cylindrical form and has [plural] a plurality of air vents 4 extending in the axial direction of the metal carrier 2. A cylindrical case 6 covers the periphery of the honeycomb structure 5. In this embodiment, the air vents 4 are substantially equal in size to each other and are disposed in concentric rings around an axis of the honeycomb structure 5. Further, the [plural] plurality of air vents 4 existing at the outermost position of the honeycomb structure 5 are formed by cooperation of the entire inner face of the case 6 and a waved plate 7 of the honeycomb structure 5. The catalyst layer 3 is formed or carried on the honeycomb structure 5 after sintering treatment of the inner face of the respective air vents 4.

Please **amend the paragraph beginning on page 4, line 16**, as follows:

Figure 3 shows the results of the measurement. In this figure, Examples 1 - 3 correspond to Examples 1 - 3 in Table 1, respectively. As shown in Fig. 3, when the heating temperature was over about 800°C, oxidation in Examples 1 -3 started. However, in the case of Example 1, which contained Mo, the oxidation increase was merely about 0.57 wt% even

at a heating temperature of 1000°C. This made it clear that Example 1 had an excellent high temperature oxidation resistance. On the other hand, abnormal oxidation arose at a heating temperature of about 900°C or more in Example 2[, as indicated by the broken line and the numeral 2,] and at a temperature of about 950°C or more in Example 3, [respectively] as indicated by the broken lines.

IN THE CLAIMS:

All claims are reproduced below, with claims 1, 8, 15, and 20 being rewritten as follows:

1. (Five times amended) A metal carrier for a catalyst comprising:

a honeycomb structure made of ferritic stainless steel and shaped in a cylindrical form, said honeycomb structure having a plurality of air vents, the air vents being substantially equal in size to each other and disposed in concentric rings around an axis of said honeycomb structure;

a cylindrical case covering an outer peripheral surface of the honeycomb structure, wherein the cylindrical case is composed of ferritic stainless steel containing Mo, said Mo content in the ferritic stainless steel is in the range of 0.30 wt% $\leqq$ Mo $\leqq$ 2.50 wt%; and

a catalyst layer being formed on exposed surfaces of said honeycomb structure and on an interior surface of said cylindrical case, and since the material of the case is the same as that of the honeycomb structure, a coefficient of linear expansion of the case is substantially the same as a coefficient of linear expansion of the honeycomb structure, thereby suppressing

thermal deformation of the case, wherein the plurality of air vents existing at an outermost position of the honeycomb structure is formed by cooperation of an entire inner face of the case and a waved plate of the honeycomb structure.

6. The metal carrier for a catalyst according to claim **1**, wherein the catalyst layer is a noble metal formed on the honeycomb structure.

7. The metal carrier for a catalyst according to claim **6**, wherein the noble metal is platinum.

8. (Five times amended) A metal carrier for a catalyst comprising:

a honeycomb structure made of ferritic stainless steel and having a catalyst layer formed thereon, said honeycomb structure having a plurality of air vents, the air vents being substantially equal in size to each other and disposed in concentric rings around an axis of said honeycomb structure;

a case covering an outer surface of the honeycomb structure, wherein the case is composed of ferritic stainless steel containing Mo, said Mo content in the ferritic stainless steel is in the range of 0.30 wt% $\leqq$ Mo $\leqq$ 2.50 wt%,

wherein said catalyst layer being formed on exposed surfaces of said honeycomb structure and on an interior surface of said cylindrical case, and since the material of the case is the same as that of the honeycomb structure, a coefficient of linear expansion of the case is

substantially the same as a coefficient of linear expansion of the honeycomb structure, thereby suppressing thermal deformation of the case, and

wherein the plurality of air vents existing at an outermost position of the honeycomb structure is formed by cooperation of an entire inner face of the case and a waved plate of the honeycomb structure

13. The metal carrier for a catalyst according to claim **8**, wherein the catalyst layer is a noble metal formed on the honeycomb structure.

14. The metal carrier for a catalyst according to claim **13**, wherein the noble metal is platinum.

15. (Four times amended) A metal carrier for a catalyst comprising:

a honeycomb structure made of ferritic stainless steel, said honeycomb structure having a plurality of air vents, the air vents being substantially equal in size to each other and disposed in concentric rings around an axis of said honeycomb structure;

a case covering an outer peripheral surface of the honeycomb structure, wherein the case is composed of ferritic stainless steel containing Mo, said Mo content in the ferritic stainless steel is 1.2 wt%; and

a catalyst layer being formed on exposed surfaces of said honeycomb structure and on an interior surface of said cylindrical case, and since the material of the case is the same as that of the honeycomb structure, a coefficient of linear expansion of the case is substantially the same as a coefficient of linear expansion of the honeycomb structure, thereby suppressing thermal deformation of the case, wherein the plurality of air vents existing at an outermost position of the honeycomb structure is formed by cooperation of an entire inner face of the case and a waved plate of the honeycomb structure.

18. The metal carrier for a catalyst according to claim **15**, wherein the catalyst layer is a noble metal formed on the honeycomb structure.

19. The metal carrier for a catalyst according to claim **18**, wherein the noble metal is platinum.

20. (Thrice Amended) A metal carrier for a catalyst comprising:

a honeycomb structure made of ferritic stainless steel and having a catalyst layer formed thereon, said honeycomb structure having a plurality of air vents, the air vents being substantially equal in size to each other and disposed in concentric rings around an axis of said honeycomb structure;

a case covering an outer surface of the honeycomb structure, wherein the case is composed of ferritic stainless steel containing Mo, said Mo content in the ferritic stainless steel is 1.20wt%,

wherein said catalyst layer being formed on exposed surfaces of said honeycomb structure and on an interior surface of said cylindrical case, and since the material of the case is the same as that of the honeycomb structure, a coefficient of linear expansion of the case is substantially the same as a coefficient of linear expansion of the honeycomb structure, thereby suppressing thermal deformation of the case, and

wherein the plurality of air vents existing at an outermost position of the honeycomb structure is formed by cooperation of an entire inner face of the case and a waved plate of the honeycomb structure.